

## MEMORANDUM

**DATE:** July 28, 2010

**TO:** Nick Hetrick, Arcata FWO

**FROM:** Kimberly True  
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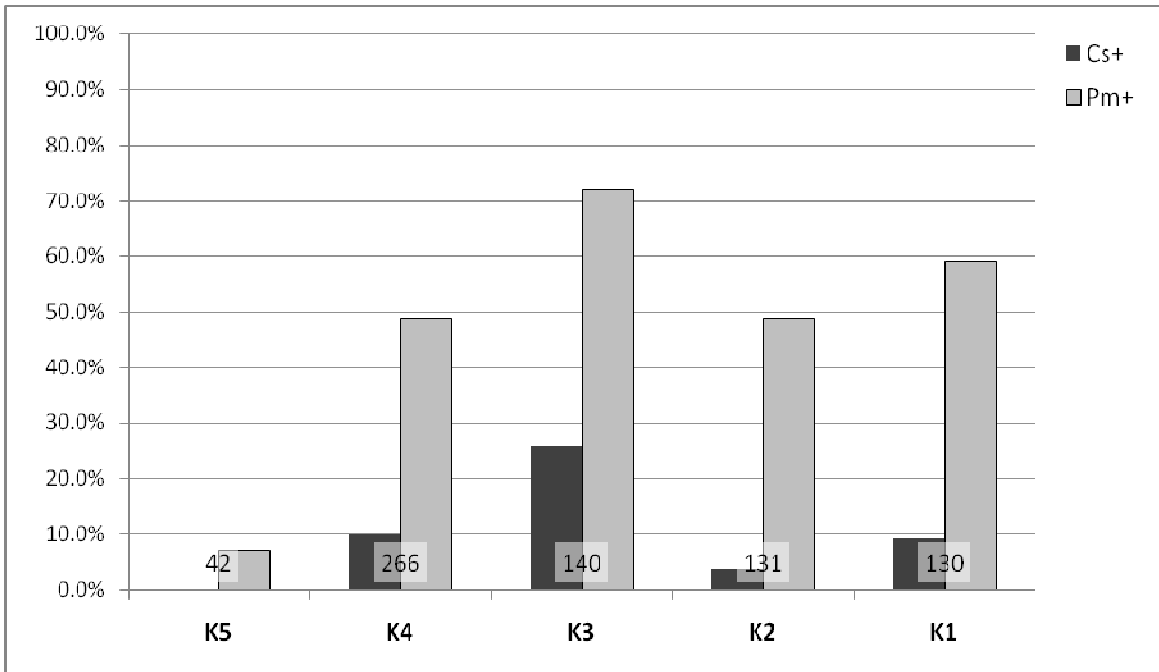
**SUBJECT:** 2010 Klamath River Salmonid Health Monitoring

As a component of Klamath River fish health assessment, the California-Nevada Fish Health Center is examining juvenile Klamath River Chinook Salmon to monitor the incidence of *Ceratomyxa shasta* and *Parvicapsula minibicornis* infection. Fish are collected by biologists with the Karuk Tribe, Yurok Tribe, Hoopa Tribe and US Fish and Wildlife Service. The CA-NV Fish Health Center is coordinating disease monitoring efforts and providing laboratory support for the project.

Pathogen testing by QPCR has been performed for the majority of Chinook juveniles collected through the week of 21 June for all reaches. *Ceratomyxa shasta* has been detected in 11.1% (79/709) and *Parvicapsula minibicornis* has been detected in 52.9% (375/709) of Klamath Chinook juveniles tested thus far. Prevalence of infection for all samples tested to date is summarized by reach in Figure 1 and Table 1. Weekly incidence of infection is reported for each reach in Figures 2-6. All data are preliminary and subject to revision.

**CORRECTION:** Two errors were noted in the previous update, dated 17 June 2010. The prevalence of infection for *Ceratomyxa shasta* (27/412, 6.6%) and *Parvicapsula minibicornis* (138/412, 33.5%) were correct in the narrative, however errors occurred in Table 2 and Figure 2 for *P.minibicornis* weekly incidence of infection on 31 May in the K4 reach. Corrections are as follows:

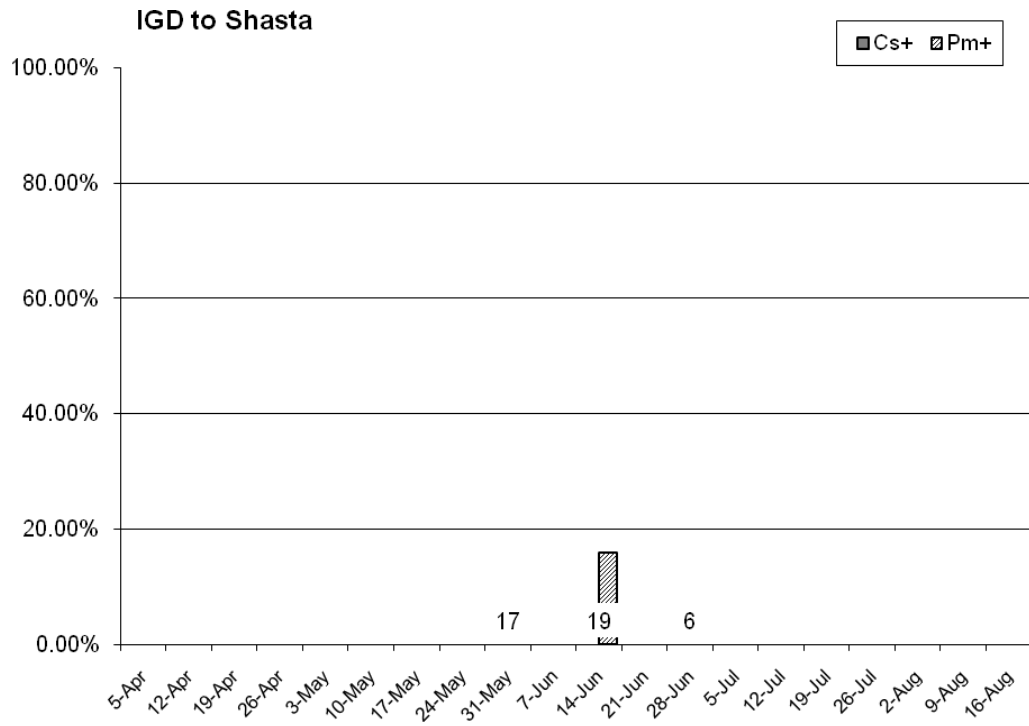
- 1) No Cs positive samples were detected the week of 5-Apr (an error in Table 2 previously reported 1 positive sample).
- 2) The number of Pm positives for 31-May were 17 (an error in Table 2 previously reported 48 positive samples).



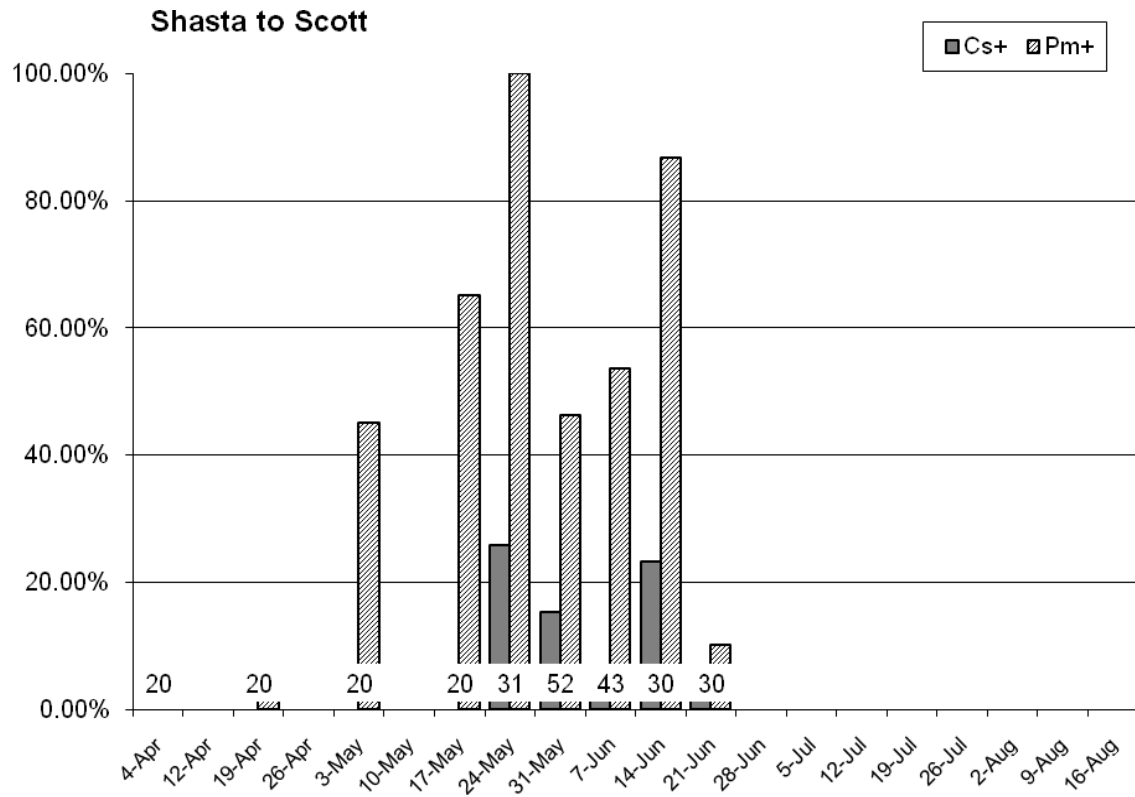
Reach	Total Number of Samples (N)	Number <i>Cs</i> Positive	Number <i>Pm</i> Positive
K5	42	0	3
K4	266	26	130
K3	140	36	101
K2	131	5	64
K1	130	12	77
Total Fish Sampled	709		
Overall POI (%)		79/709 (11.1%)	375/709 (52.9%)

**Figure 1/Table 1. Prevalence of *Ceratomyxa shasta* and *Parvicapsula minibicornis* infections in juvenile Klamath River Chinook salmon by capture reach. Sample numbers collected in each reach are displayed in column 2 of Table 1. Number of positive fish for each myxozoan parasite, and prevalence of infection (POI) is given in columns 3 and 4. Reach descriptions are provided below.**

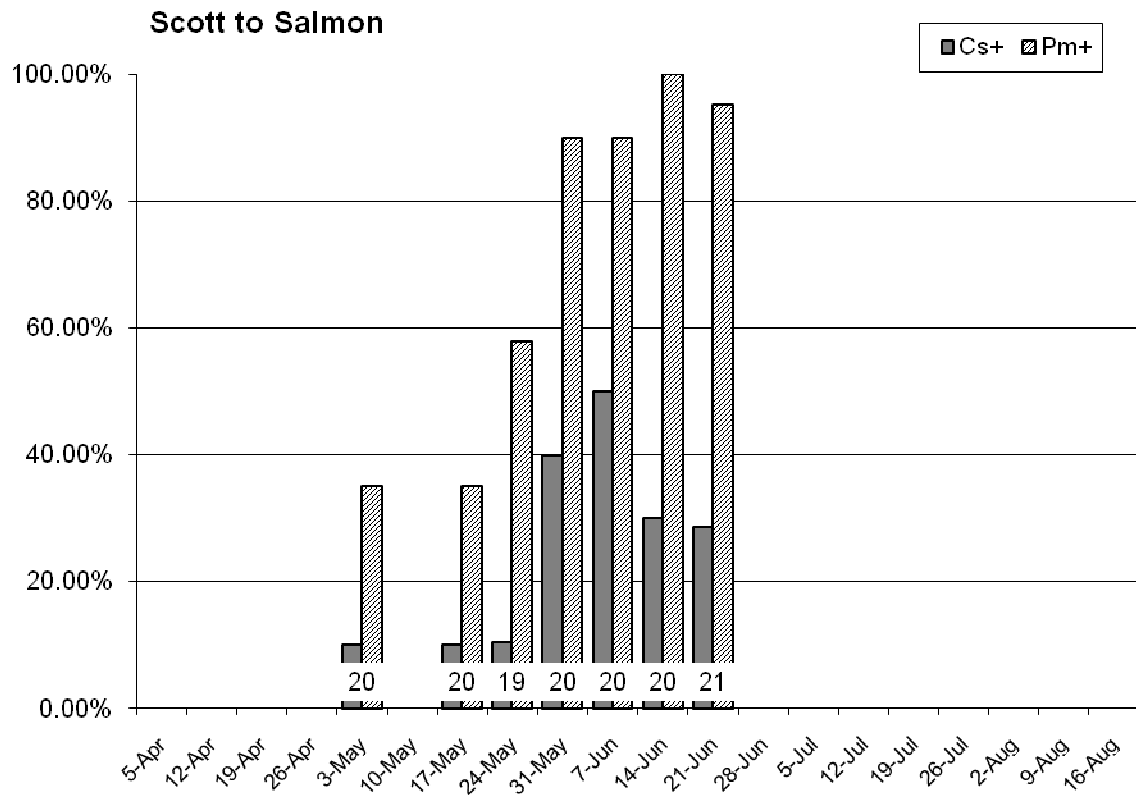
Sample Reach	Reach Code	River Mile Klamath main stem
Iron Gate Dam to Shasta	K5	Klamath 190-177
Shasta to Scott	K4	Klamath 177-144
Scott to Salmon	K3	Klamath 144-66
Salmon to Trinity Confluence	K2	Klamath 66-44
Trinity Confluence to Estuary	K1	Klamath 44-4
Klamath Estuary	K0	Klamath 4-0



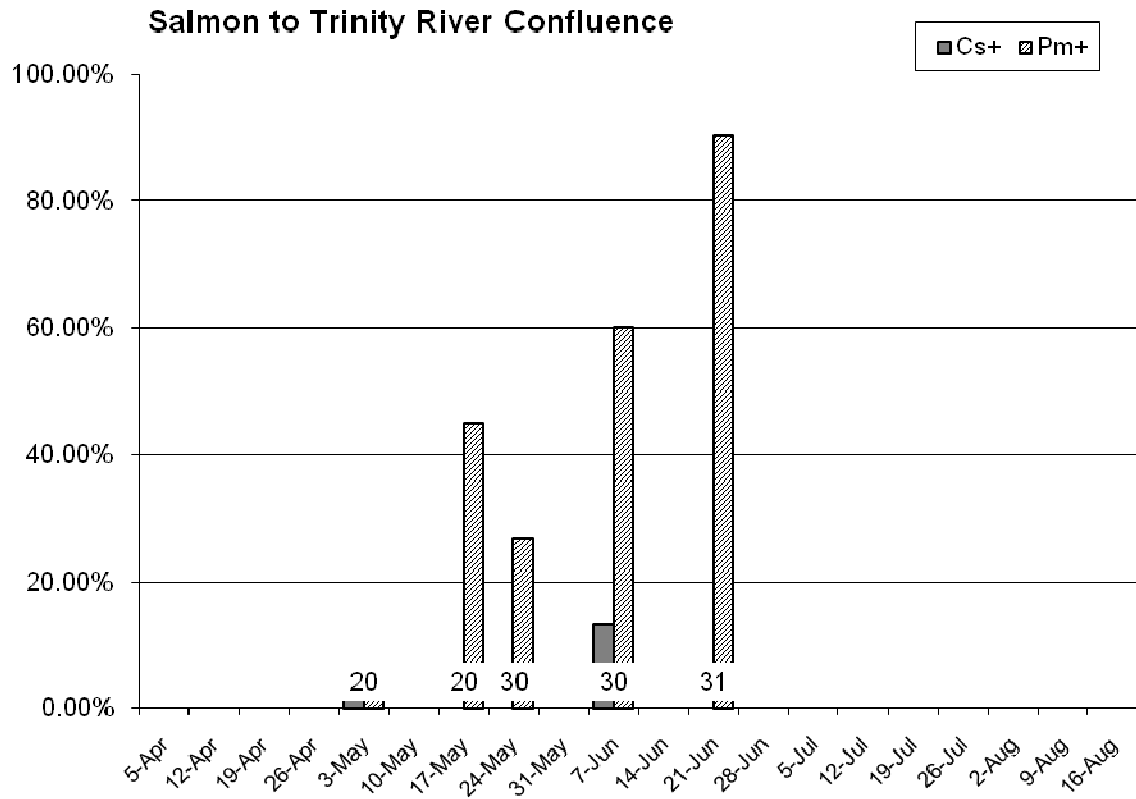
**Figure 2. Weekly incidence of *Ceratomyxa shasta* and *Parvicapsula minibicornis* infections in juvenile Klamath River Chinook salmon captured in the Iron Gate Dam (IGD) to Shasta (K5) reach. All data are preliminary and subject to revision.**



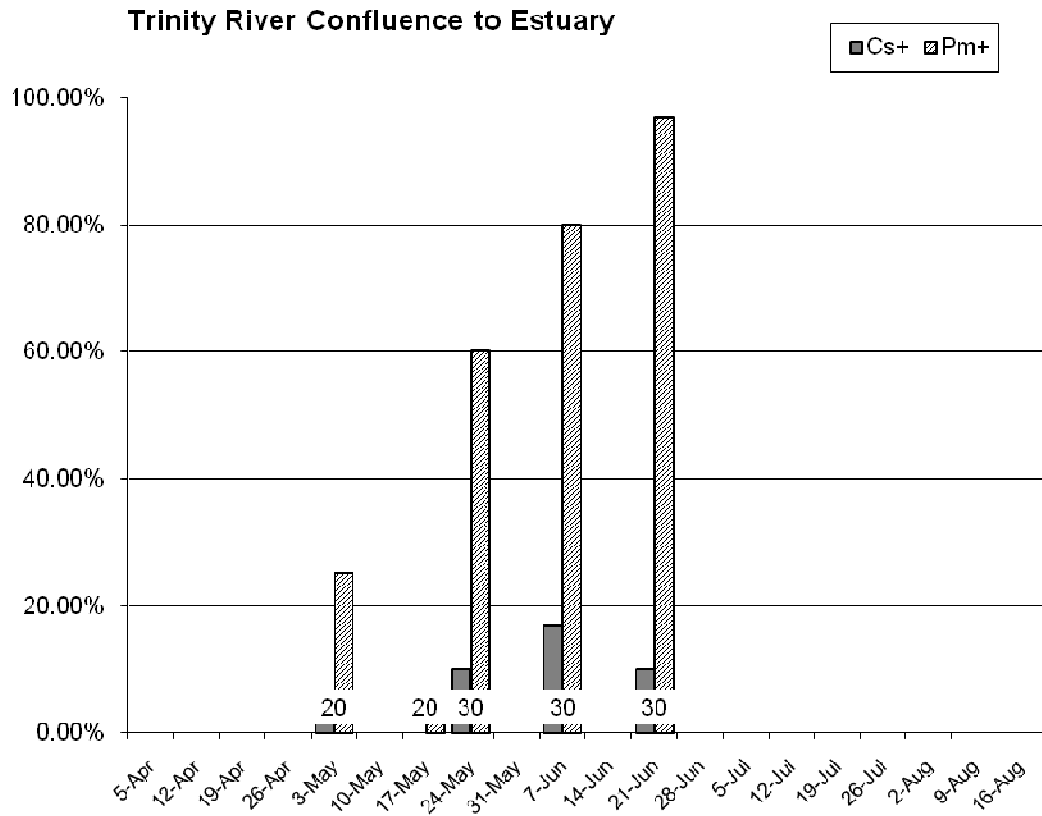
**Figure 3. Weekly incidence of *Ceratomyxa shasta* and *Parvicapsula minibicornis* infections in juvenile Chinook salmon captured in the Shasta to Scott (K4) reach. All data are preliminary and subject to revision.**



**Figure 4. Weekly incidence of *Ceratomyxa shasta* and *Parvicapsula minibicornis* infections in juvenile Klamath River Chinook salmon captured in the Scott to Salmon (K3) reach. All data are preliminary and subject to revision.**



**Figure 5. Weekly incidence of *Ceratomyxa shasta* and *Parvicapsula minibicornis* infections in juvenile Klamath River Chinook salmon captured in the Salmon to Trinity River confluence (K2) reach. All data are preliminary and subject to revision.**



**Figure 6. Weekly incidence of *Ceratomyxa shasta* and *Parvicapsula minibicornis* infections in juvenile Klamath River Chinook salmon captured in the Trinity River confluence to Estuary (K1) reach. All data are preliminary and subject to revision.**